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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHU, DAVID H

ART UNIT

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NOTIFICATION DATE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/563,325	Applicant(s) SAKUTA ET AL.	
	Examiner DAVID H. CHU	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-18,20-22,24,25 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-18,20-22,24,25 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The objection to the specification is withdrawn in light of the Applicant's argument.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1-7, 9-18, 20-22, 24, 25 and 27 are rejected under 35

U.S.C. 103(a) as being unpatentable over Liao et al. (PGPUB Document No. US 2004/0075660) in view of Di Federico et al. (PGPUB Document No. US 2005/0226538), and further in view of Drewry (U.S. Patent No. 5748178).

5. **Note with respect to claim 1**, Liao et al. teaches:

- A control section for setting a first color element level for a pixel overlapping a basic portion of a line, based on both or either a first distance between a center of the pixel and at least one dot contained in a stroke in a first direction or a line width set for the stroke
[Liao et al. teaches an apparatus 3 that determines the color of each of the pixels according to the distance between a pixel and a line. Further, Liao et al. teaches that one of the parameters used for determining the color takes into account the line width. Clearly as shown in FIG. 1A, 1B, 2 of Liao et al., some pixels overlap with the line]
[Liao, 0022, 0025-0026]

However, Liao et al. does not expressly teach:

- Applying the anti-aliasing teaching stated above to a character

Di Federico et al. teach:

- Applying anti-aliasing to a text skeleton

[Di Federico, Riccardo, 0071]

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Therefore, at the time of the invention, it would have been obvious to one of an ordinary skill in the art to apply the anti-aliasing teaching of Liao et al. to the text of Di Federico et al., because ***it is well known in the art to apply anti-aliasing to a text as it helps reducing the jaggedness and geometrical distortions.***

[Di Federico, Riccardo, 0071]

The combined teachings of Liao et al. and Di Federico et al. do not expressly teach:

- Using subpixels for the anti-aliasing teaching

However, it is well known in the art utilize subpixels, because it provides greater detail as it increases the resolution, and enables anti-aliasing of text.

Therefore, at the time of the invention, it would have been obvious to one of an ordinary skill in the art to apply the combined anti-aliasing teaching of Liao et al. and Di Federico et al., because ***this enables anti-aliasing of text with greater detail.***

Further, the combined teachings of Liao et al. and Di Federico et al. do not expressly teach:

- Setting a second color element level for a subpixel near the subpixel having the set first color element level, based on a second distance between the subpixel having the set first color element level and the near subpixel in a second direction

Drewry teaches:

- An anti-aliasing method that blends colors based on the distance of neighboring pixels. Further, Drewry teaches assigning smaller weightings to pixels that are farther away. The distance of neighboring pixels is the equivalent to the “**second distance**” used for setting a blending value (“**second color element level**”)

(Drewry, col. 1, line 48 – col. 2, line 8)

Therefore, at the time of the invention, it would have been obvious to one of an ordinary skill in the art to apply the anti-aliasing teaching of Drewry to the teachings of Liao et al. and Di Federico et al., because ***it is well known in the art to apply anti-aliasing to a text as it helps reducing the jaggedness and geometrical distortions.***

[Di Federico, Riccardo, 0071]

6. **Note with respect to claim 2**, the combined teachings of Liao et al. and Di Federico et al. teach:

The character display apparatus according to claim 1,

- Wherein the at least one dot contained in the stroke has the same X-coordinate value as the center of the subpixel

[As seen in FIG. 1A, 1B, 2 of Liao et al., it is clear that at least one dot on the line share a common x coordinate to a pixel]

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7. **Note with respect to claim 3**, the combined teachings of Liao et al. and

Di Federico et al. teach:

The character display apparatus according to claim 1,

- Wherein the control section sets a smaller color element level of the subpixel as the distance is increased

[According to the anti-aliasing (blending) teaching of Liao et al. pixels closer to the line the color is closer to the line, whereas pixels farther away are closer to the background color]

[Liao et al., 0006]

8. **Note with respect to claim 4**, the combined teachings of Liao et al. and

Di Federico et al. teach:

The character display apparatus according to claim 1,

- Wherein the control section sets the color element level of the subpixel based on a line width in at least one of an X direction and a Y direction set for the stroke

[Liao et al. 0025]

9. **Note with respect to claim 5**, the combined teachings of Liao et al. and

Di Federico et al. teach:

The character display apparatus according to claim 1,

- Wherein the control section sets the color element level of the subpixel to a predetermined value when the distance is within a predetermined range

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[According to the calculations of Liao et al., the distance value that assigns a pixel to only the color of the background is the range. Such range is predetermined by the equations of Liao et al.]

10. **Note with respect to claim 6**, the combined teachings of Liao et al. and Di Federico et al. teach:

The character display apparatus according to claim 1, comprising:

- A display section comprising a plurality of display pixels arranged in a matrix on the screen, each of the plurality of display pixels comprising a plurality of the subpixels arranged in a predetermined direction and associated with a plurality of respective color elements, wherein the control section controls display of the character on the screen by controlling levels of the plurality of color elements associated with the plurality of subpixels based on the stroke data separately

[As stated above it is well known in the art to apply the anti-aliasing teaching to pixels to subpixels. Therefore, the pixels and corresponding subpixels in FIG. 1A, 1B, 2 are arranged in a matrix. Also, as stated above, the apparatus 3 of Liao et al teaches determining colors for each individual pixel]

11. **Note with respect to claim 7**, the combined teachings of Liao et al. and Di Federico et al. teach:

The character display apparatus according to claim 1, comprising:

- A storage section storing a table associating at least one of the distance between the center of the subpixel and the at least one dot

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contained in the stroke and the line width set for the stroke with the color element level of the subpixel, wherein the control section sets the color element level of the subpixel based on information contained in the table

[Liao et al. teaches storing the parameters used for determining the color of pixels in a table 341]

[Liao et al. 0040]

12. **Note with respect to claims 9 and 20**, the combined teachings of Drewry and Di Federico et al. teach:

The character display apparatus according to claim 8, comprising:

- A storage section storing a table associating the distance between the subpixel having the set color element level and the near subpixel and the set color element level with the color element level of the near subpixel, wherein the control section sets the color element level of the near subpixel based on information contained in the table

[It is inherent that the values/parameters (distance color, etc.) used in calculating the color of Drewry require storing them in any type of data-structure/memory. The data-structure/memory is the equivalent to a table]

13. **Note with respect to claim 10**, the combined teachings of Liao et al. and Di Federico et al. teach:

The character display apparatus according to claim 1, wherein,

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- The stroke data is skeleton data representing a skeletal shape of the character or character contour information representing a contour shape of the character

[As stated above, the combined teachings of Liao et al. and Di Federico et al. teach applying anti-aliasing to a text skeleton]

14. **Note with respect to claim 12**, the combined teachings of Liao et al. and Di Federico et al. teach:

The character display apparatus according to claim 11, wherein,

- The control section sets the color element level of the subpixel within the predetermined range based on a predetermined table defining the color element level of the subpixel within the predetermined range and the distance

[Refer to rejections above with respect to claims 1, 5 and 7]

15. **Note with respect to claims 11, 22, 24, 25 and 27**, claims 11, 22, 24, 25 and 27 are similar in scope to the claim 1, thus the rejections to claim 1 hereinabove are also applicable to claims 11, 22, 24, 25 and 27.

Further with respect to claims 11 and 21, the predetermined range is the range stated in the rejection above with respect to claim 5.

16. **Note with respect to claims 13-18 and 21**, claims 13-18 and 21 are similar in scope to the claims 2-7 and 10 respectively, thus the rejections to

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claims 2-7 and 10 respectively hereinabove are also applicable to claims 13-18 and 21.

17. **Note with respect to claim 13**, claim 13 is similar in scope to the claim 2, thus the rejections to claim 2 hereinabove are also applicable to claim 13.

Response to Arguments

18. Applicant's arguments filed 5/26/2008 have been fully considered but they are not persuasive.

Following are the Applicant's arguments in bullets and examiner's response in brackets.

19. The applicant argues:

- The convolution of Drewry is applied indiscriminately to any pixels in any direction based on a set weighting scheme. Therefore, Drewry does not teach setting a second color element based on a second distance between a subpixel and another having the set first color element.

: The Examiner respectfully disagrees. The filter of Drewry is applied to a group of neighboring pixels as shown in FIG. 3C. Said group of neighboring pixels comprise of pixels in a second direction perpendicular to a first pixel. Therefore applying the filter to a defined set of neighboring pixels 393 is the equivalent to setting a second color element level based on a second direction that is perpendicular to the first direction, wherein the set first color element is the equivalent to pixel 391.

(Drewry, col. 7, line 47 – col. 8, line 24)

- Drewry either does not disclose a single direction or the direction of Drewry refers to a radial direction.

: Refer to the Examiner's response above.

- There is insufficient support for the Examiner's conclusion that the size of Liao's index table is not increased as applied to the instant invention. Fonts with a blocky nature do not compare to characters as disclosed in the application.

: The Examiner's statement was in response to the Applicant's claim that characters

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involving curved lines will increase the size of Liao's index table. The Examiner is simply stating that the claimed invention do not exclude the use of fonts of a blocky nature (no curves), and, according to the argument previously supplied by the Applicant, such type of fonts do not increase the size of Liao's index table.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID H. CHU whose telephone number is (571)272-8079. The examiner can normally be reached on M-F 9:30am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kee M Tung/
Supervisory Patent Examiner, Art Unit 2628

/David H. Chu/
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